

*Alvis*

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CLASSIFICATION AND CORRELATION  
OF  
THE SOILS OF

**MARION COUNTY  
INDIANA**

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**MARCH 1975**

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U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
MIDWEST TECHNICAL SERVICE CENTER  
LINCOLN, NEBRASKA

UNITED STATES DEPARTMENT OF AGRICULTURE  
Soil Conservation Service  
Midwest Technical Service Center  
Lincoln, Nebraska 68508

Classification and Correlation  
of the Soils of  
Marion County, Indiana

The Classification and Correlation of the Soils of Marion County, Indiana was held as part of the final field review and field correlation at Indianapolis, June 17-19, 1974. Assisting in the review of draft manuscript, descriptive legend, laboratory data, field notes, field sheets and other supporting evidence were Ralph Sturm, survey party leader; Rex A. Brock, Soil Scientist; Frank W. Sanders, Soil Correlator; H. Raymond Sinclair, State Soil Scientist; and Maurice Stout. Richard H. Gilbert, Soil Scientist; Kenneth S. Pyle, District Conservationist; Jerry L. Keller, Area Conservationist; and D. P. Franzmeier, Purdue University also participated in part of the review. M. Stout participated in a field review in June 1971.

Symbol	Field Name	Approved Name	Manuscript* Map Symbol
Br	Brookston silty clay loam	Brookston silty clay loam	Br
CrA	Crosby silt loam 0-2% slopes	) Crosby silt loam, ) 0 to 2 percent slopes	CrA
CrB2	Crosby silt loam, 2-4% slopes, eroded	) Crosby-Miami silt loams, ) 2 to 4 percent slopes, eroded	CsB2
Ee	Eel silt loam	Eel silt loam	Ee
FoA	Fox loam, 0-2% slopes	) Fox loam, ) 0 to 2 percent slopes	FoA
FoB2	Fox loam, 2-6% slopes, eroded	) Fox loam, ) 2 to 6 percent slopes, eroded	FoB2

\*The first capital letter is the first one of the series name. The second capital letter indicates the class of slope. Symbols without a slope letter are those with a slope range of 0 to 2 percent slopes. A final number of 2 or 3 in the symbol indicates that the soil is eroded or severely eroded respectively.

Symbol	Field Name	Approved Name	Manuscript Map Symbol
FoC2	Fox loam, 6-12% slopes, eroded	) Fox complex, ) 6 to 15 percent slopes,	FxC2
FoC3	Fox loam, 6-12% slopes, severely eroded	) eroded ) )	
FoD2	Fox loam, 12-18% slopes, eroded	) )	
Ge	Genesee silt loam	Genesee silt loam	Ge
HeF	Hennepin loam, 25-50% slopes	) Hennepin loam, ) 25 to 50 percent slopes	HeF
MgA	Martinsville silt loam, 0-2% slopes	) Martinsville silt loam, ) 0 to 2 percent slopes	MgA
MgB2	Martinsville silt loam, 2-6% slopes, eroded	) Martinsville silt loam, ) 2 to 6 percent slopes, eroded	MgB2
MmA	Miami silt loam, 0-2% slopes	) Miami silt loam, ) 0 to 2 percent slopes, gravelly substratum	MmA
MmB2	Miami silt loam, 2-6% slopes, eroded	) Miami silt loam, ) 2 to 6 percent slopes, eroded	MmB2
MmC2	Miami silt loam, 6-12% slopes, eroded	) Miami silt loam, ) 6 to 12 percent slopes,	MmC2
MtC3	Miami clay loam, 6-12% slopes, severely eroded	) eroded ) )	
MmD	Miami silt loam, 12-18% slopes	) Miami complex, ) 12 to 18 percent slopes,	MxD2
MtD3	Miami clay loam, 12-18% slopes, severely eroded	) eroded ) )	
MmE	Miami silt loam, 18-24% slopes	) Miami complex, ) 18 to 24 percent slopes, eroded	MxE2
OcA	Ockley silt loam, 0-2% slopes	) Ockley silt loam, ) 0 to 2 percent slopes	OcA

Symbol	Field Name	Approved Name	Manuscript Map Symbol
OcB2	Ockley silt loam, 2-6% slopes, eroded	) Ockley silt loam, ) 2 to 6 percent slopes, eroded	OcB2
Re	Rensselaer clay loam	Rensselaer clay loam	Re
Sh	Shoals silt loam	Shoals silt loam	Sh
Sk	Sleeth loam	Sleeth loam	Sk
Sn	Sloan silt loam	Sloan silt loam	Sn
Bt	Brookston soils	Urban land-Brookston complex	Ub
CtA	Crosby soils, 0-2% slopes	) Urban land-Crosby complex )	Uc
FtA	Fox soils, 0-3% slopes	) Urban land-Fox complex, ) 0 to 3 percent slopes	UfA
FtC	Fox soils, 6-12% slopes	) Urban land-Fox complex, ) 6 to 12 percent slopes	UfC
Gn	Genesee soils	Urban land-Genesee complex	Ug
MuB	Miami soils, 0-6% slopes	) Urban land-Miami complex, ) 0 to 6 percent slopes	UmB
MuC	Miami soils, 6-18% slopes	) Urban land-Miami complex, ) 6 to 12 percent slopes	UmC
Wg	Westland soils	Urban land-Westland complex	Uw
We	Westland clay loam	Westland clay loam	We
Wh	Whitaker silt loam	Whitaker silt loam	Wh

## Miscellaneous Mapping Units Correlated as Spot Symbols:

Map Symbol	Field Name	Approved Name	Spot Symbol <sup>1/</sup>
Gp	Gravel pit	Gravel pits	2,318 (Areas will be delineated and named "Gravel pits")
Cf	Cut and fill land	) Cut and fill land	9872 (Delineate 3.8
Borrow pits	Borrow pits	)	areas and name "Cut
Md	Made land	)	Under 5,443 and fill land")

<sup>1/</sup> Symbols to be used in compiling are those listed in the Guide for Soil Map Compilation on Photobase Map Sheets.

Series established by this correlation:

None

Series dropped or made inactive:

None

The soils of Marion County have been joined to the completed Hancock County and Johnson County; the to-be published Boone and Hendricks Counties. Adjacent Morgan and Hamilton Counties have yet to be complete, but Marion and portions mapped in Hamilton have been joined. Soil lines, slopes, and erosion join. Names differ because of changes in composition and ranges in these counties. The general soil map is also reasonably matched and of acceptable detail and mapping unit design. The soil interpretations are compatible with data contained on completed forms SCS-Soils-5. All SCS-Soils-5 forms are available for review and comparison.

Field sheets will be forwarded to the Lincoln Cartographic Unit for processing of overlays by March 1975. The requirements of Soils Memorandum-8 are satisfied.

## Cartographic Instructions:

The field maps are high flight photography with a map date of 3-7-70. Considerable change has occurred in and around Indianapolis, but Indiana is planning to publish using this photography. The scale is 1:15840 and detail is appropriate for publication at this scale.




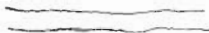


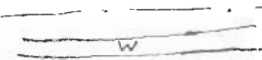









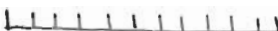

The field symbols used are publication symbols and will stand except as noted in the correlation and the cultural symbols as noted. Please note changes in mapping unit symbols in the conversion legend and instructions in the correlation of mapping units and Notes to Accompany the Classification and Correlation of Marion County, Indiana.

The atlas field sheets show highways very clearly. Indiana is agreeable to not compile highway and roads shown by conventional means. If they are not compiled, they will be designated only by state and federal highways and route numbers. They are also agreeable to the combining of road classes to one only. Railroads will be named and shown. Those designated are the Marion County Primary Thoroughfare System--marked in red on Indianapolis and Marion County--Street Map, 1974.

Indiana will map, finish the field sheets, and prepare for publication. Marion County is on the FY 77 publication schedule. The drainage and culture overlay and soils overlay will be prepared through the Lincoln Cartographic Unit.

The following legend contains the signs and symbols used in the survey area and indicates those to be retained and used in map finishing. Symbols used in map finishing are those contained in the Guide for Soil Map Compilation on Photobase Map Sheets, SCS, 1970.

## LEGEND OF CONVENTIONAL SYMBOLS

<u>Description</u>	<u>Symbol</u>	<u>Recommended Disposition</u>
<u>Streams, Rivers, and Ditches</u>		
Permanent		Retain
Crossable intermittent streams		Retain
Non-crossable intermittent streams		Retain
River (Named)		Retain
Non-crossable gully		Retain
Stream ending more than 1/4" from channel		Retain
Water Company Canal		Retain
<u>Lakes, Ponds, and Reservoirs</u>		
Perennial		Retain
Intermittent		Retain
Dug pond or lake		Retain
Very large dam (to scale)		Retain
<u>Other Drainage Features</u>		
Wet spot		Retain
Spring (developed or perennial)		Delete
<u>Relief Features</u>		
<u>Escarpment</u>		
Not on soil boundary		Retain
On soil boundary		Retain
Short steep slopes		Retain
<u>Levee</u>		
Without road		Combine
With road		

<u>Description</u>	<u>Symbol</u>	<u>Recommended Disposition</u>
<u>Spot Symbols</u>		
Eroded area (less than 3 acres)		Retain
Sand spot (1/4 to 2 acres) (loamy sand or sand)		Retain
Stones 10" or larger (2 to 5 acres)		Retain
Depressional area (1/4 to 3 acres)		Delete
Knoll or hill that is better drained (1/4 to 3 acres)		Delete
<u>Roads and Road Designation (Named)</u>		
Interstate		Retain
Federal		Retain
State		Retain
Other selected roads	NAME	Retain
<u>Railroads</u>		
Single track		Retain
Multiple track		Retain
<u>Buildings</u>		
School (Named)		Retain
Church (Not named)		Retain
<u>Other Features</u>		
Cemetery	[NAME] or NAME, WHERE KNOWN	Retain
Gravel pit (less than 5 acres)		Retain
<u>County Line</u>	BOONE COUNTY	Retain
<u>Photo Matchline</u> (Green) ( & ) (Black)	JOINS SHEET 5	Retain
<u>Section number</u> (center of section in 1/4" numbers)		Retain

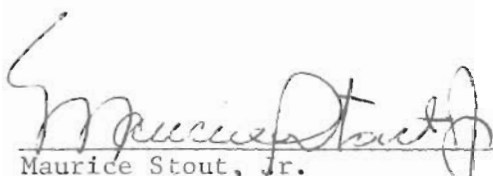


Marion County, Indiana

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<u>Description</u>	<u>Symbol</u>	<u>Recommended Disposition</u>
<u>Township number</u> (outside neat line) (right side of soil map)		Retain
<u>Range number</u> (outside neat line) (top of soil map)		Retain
<u>State plane coordinates</u> (numbers and index marks along edges of soil map)		Retain

Approved: March 25, 1975



Maurice Stout, Jr.  
Head, Soil Correlation Staff  
Midwest TSC

CONVERSION LEGEND RELATING FIELD MAP SYMBOLS  
TO PUBLICATION SYMBOLS

Field Symbol	Publication Symbol	Field Symbol	Publication Symbol
Br	Br	MgA	MgA
Bt	Ub	MgB2	MgB2
Cf	<u>1/</u>	MnA	MnA
CrA	CrA	MmB2	MmB2
CrB2	CsB2	MmC2	MmC2
CtA	Uc	MmD	MxD2
Ee	Ee	MmE	MxE2
FoA	FoA	MtC3	MmC2
FoB2	FoB2	MtD3	MxD2
FoC2	FxC2	MuB	UmB
FoC3	FxC2	MuC	UmC
FoD2	FxC2	OcA	OcA
FtA	UfA	OcB2	OcB2
<b>FtC</b>	UfC	Re	Re
Ge	Ge	Sh	Sh
Gn	Ug	Sk	Sk
Gp	<u>1/</u>	Sn	Sn
HeF	HeF	We	We
Md	<u>1/</u>	Wg	Uw
		Wh	Wh

1/ Symbols to be used in compiling are those listed in the Guide for Soil Map Compilation on Photobase Map Sheets.

CLASSIFICATION OF PEDONS SAMPLED FOR LABORATORY ANALYSIS

Purdue University Soils Laboratory

<u>Sampled As:</u>	<u>Sample No.:</u>	<u>Approved:</u>
Crosby	S71 IN 49-2 (1-6), S71 IN 49-1 (1-7)	Crosby
Genesee	S72 IN 49-2 (1-6), S72 IN 49-1 (1-6)	Genesee
Rensselaer	S73 IN 49-1 (1-8)	Rensselaer

Notes to Accompany  
Classification and Correlation  
of the Soils of  
Marion County, Indiana

by  
Maurice Stout

General: The city of Indianapolis is the major city within Marion County. City and urban sprawl occupies approximately 2/3 percent of the county area and affects the entire county land use. The remaining 1/3 is rural areas having interspersed urban and agricultural land use. The non-urban land is "in waiting" for urban development. The city and county governments are one.

There are three degrees of preciseness in the mapping of this county although only two are indicated in the mapping units. The downtown, industrial, and heavily urbanized area comprises the least precise mapped part of the county. This portion is dominated by the urban component and unit containing urban in the name. The remaining part of the county is mapped using conventional mapping units to map out the relatively unaffected rural area as well as the urbanized part which is mostly residential.

The rural area was mapped using conventional techniques. The built-up portion utilized a 1941 aerial flight as well as conventional mapping techniques. The '41 photos lacked the present urban development and were exceptionally good for photo interpretation of soils. This area outside the main part of the city will contain both rural and developed areas. The fact that developed portions have disturbed and altered soil areas will be cited in the manuscript.

#### CROSBY SERIES

The Crosby soils of Marion, Johnson, and adjacent counties is marginal in respect to the average clay content of the control section. The pedon to be used exceeds 35 percent clay in some horizons, but the clay curve falls off rapidly and averages less than 35 percent. It is similar to Crosier but is finer-textured throughout. These mapping units contain soils that must be classed as Crosier as well as Crosby. These Crosby soils are generally marginal to their classification.

Unit CrB2 contains appreciable amounts of Miami soils (estimated about 55 percent Crosby, 30 percent Miami, and 15 percent inclusions. Name is changed to Crosby-Miami silt loams, 2 to 4 percent slopes.

#### CUT AND FILL LAND

Those areas having water will be designated as water. The remaining areas consist of leveled surfaces and except for built-up freeway interchanges, may consist of both Cut and fill operations. MADE LAND, as mapped, has been included with Cut and fill land. Field observations indicate the Cut and fill land should be handled as delineated areas identified as C.F. or Cut and fill land. These areas contain eight sanitary land fills which should be redesignated as "Sanitary land fill" within a delineation line.

*Fox Ockley Miami*

#### FOX SERIES

Units on steeper slopes changed to Fox Complex, 6 to 15 percent slopes to accomodate the significant amounts of Ockley, Rodman, Casco, Princeton, and Miami soils within the delineations.

#### GENESEE SERIES

The pedon described is calcareous throughout (14 to 47% (CaCO<sub>3</sub>) and the use of these soils as Genesee is taxadjunct to the concept. Much of the soils are calcareous through but not all.

#### MADE LAND

See Cut and fill land.

#### MIAMI SERIES

Miami delineations on 0 to 2 percent slopes have gravel in the substratum. They are developing in till overlying coarse outwash materials. These were phased as, "gravelly substrata."

The eroded units were combined as 6 to 12 percent slopes, eroded.

The units on steeper slopes contains Miami, Hennepin, Strawn, Fox, Ockley, and smears of gravelly outwash. Because of this composition, units on MmE, MmD, and MtD3 are renamed as Miami complex, 12 to 18 percent slopes, eroded and Miami complex, 18 to 24 percent slopes, eroded. All units observed were eroded.

#### SLEETH SERIES

*changed in OSD OK 8/2000*

These soils have 104R 4/4 colors in the 11 to 28 inch horizons believed to be due to iron content. These redder soils are typical to Indiana but redder than typical for the series concept. They are taxadjunct in this respect.

#### URBAN UNITS

Formerly called Brookston soils; Miami soils, 0 to 6 percent slopes, etc. Handbook and on-site observation indicated that these units were comprised of more than 50 percent urban structures and ranging as high as 100 percent for some delineations. Urban land was added to the name of the unit and preceded the soil name to indicate dominance. This also grouped the urban-soil units together and somewhat segregated them from the more conventional units. These mapping unit descriptions need to be rewritten to de-emphasize the agronomic aspects and to emphasize the altered conditions of soil and environment.

The urban units will be extended from the boundary of Indianapolis obtained from the 1941 flights to the boundary agreed on with Ray Sinclair 8-7-74. This extended boundary blocks out the heavily urbanized portions more smoothly and included more area.

#### WHITAKER SERIES

The Whitaker series is an Aeric Ochraqualf but the soils in this survey are grayer than Aeric will permit. The soils appear to otherwise be and perform similar to the Whitaker series. These soils classify as Typic Ochraqualfs because of color and are taxadjunct.

## CLASSIFICATION OF SOILS

<u>Soil Series</u>	<u>Classification</u>
Brookston	Typic Argiaquolls; fine-loamy, mixed, mesic
Crosby	Aeric Ochraqualfs; fine, mixed, mesic
Eel	Aquic Udifluvents; fine-loamy, mixed, nonacid, mesic
Fox loam	Typic Hapludalfs; fine-loamy over sandy or sandy-skeletal, mixed, mesic
Genesee	Typic Udifluvents; fine-loamy, mixed, nonacid, mesic
Hennepin	Typic Eutrochrepts; fine-loamy, mixed, mesic
Martinsville	Typic Hapludalfs; fine-loamy, mixed, mesic
Miami	Typic Hapludalfs; fine-loamy, mixed, mesic
Ockley	Typic Hapludalfs; fine-loamy, mixed, mesic
Rensselaer	Typic Argiaquolls; fine-loamy, mixed, mesic
Shoals	Aeric Fluvaquents; fine-loamy, mixed, nonacid, mesic
Sleeth	Aeric Ochraqualfs; fine-loamy, mixed, mesic
Sloan	Fluvaquentic Haplaquolls; fine-loamy, mixed, mesic
Westland	Typic Argiaquolls; fine-loamy, mixed, mesic
Whitaker	Aeric Ochraqualfs; fine-loamy, mixed, mesic